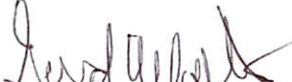




OFFICE OF THE ASSOCIATE VICE-PRESIDENT, ACADEMIC AND
ASSOCIATE PROVOST

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MEMORANDUM

ATTENTION	Senate	DATE	April 5, 2013
FROM	Gordon Myers, Chair	PAGES	1/1
	Senate Committee on		
	Undergraduate Studies		
RE:	Faculty of Science (SCUS 13-17)		

For information:

Acting under delegated authority at its meeting of April 4, 2013, SCUS approved the following curriculum revisions effective Fall 2013:

1. Department of Biomedical Physiology and Kinesiology

- (i) Approval of the acronym BPK
- (ii) Change the course acronym from KIN to BPK for all KIN courses and related pre-requisite and course description changes



SCUS 13-17

TO: G. Myers, Chair, SCUS

FROM: G. Agnes, Associate Dean
Faculty of Science

RE: Faculty of Science Curriculum
Items

DATE: March 21, 2013

The Faculty of Science has approved the following, which must now be considered by SCUS. Please place this item on the agenda of the next SCUS meeting.

Biomedical Physiology & Kinesiology

Change the course acronym from KIN to BPK for all of the Biomedical Physiology & Kinesiology courses. The department changed its name from Kinesiology to Biomedical Physiology & Kinesiology.

G. Agnes

Enclosure

c. J. Hinchliffe, C. Cupples



Department of
Biomedical Physiology and Kinesiology
Faculty of Science

February 7, 2013

Senate Committee for Undergraduate Studies
Simon Fraser University
8888 University Drive
Burnaby, BC V5A 1S6

Re: Changing course acronym from KIN to BPK

To the members of the SCUS,

MOTION:

The Department of Biomedical Physiology and Kinesiology is requesting a change in our course acronym from KIN to BPK for all of our courses.

RATIONALE:

The department changed its name from Kinesiology to Biomedical Physiology and Kinesiology several years ago. The rationale for changing our course acronym is that it will make our course names consistent with the new name of the Department.

A motion to make this change was passed at our departmental meeting held Thursday, November 15, 2012.

Attached is a list of our undergraduate courses with the required editorial changes noted.

Sincerely,

A handwritten signature in black ink that reads "Ryan Dill".

Ryan Dill
Senior Lecturer
Undergraduate Program Committee Chair
Department of Biomedical Physiology and Kinesiology
Faculty of Science
SFU

BPKKIN 105-3 Fundamentals of Human Structure and Function

Basic anatomy and physiology of the skeletal, muscular, nervous, endocrine, cardio-respiratory, urinary, digestive, immune, and reproductive systems. (distance education). Kinesiology majors and honors students may not receive credit for BPKKIN 105. KIN-BPK (or KIN) 205 or 208 may be used as a substitute for BPKKIN 105 by students in the Kinesiology Minor and Certificate programs. No student may take both BPK (or KIN) KIN 105 and BPK (or KIN) KIN 208 for credit. Recommended: grade 11 biology, chemistry and physics.

BPKKIN 110-3 Human Nutrition: Current Issues

An introduction of the principles of human nutrition with an emphasis on topics of current interest. The material is presented in a Canadian context to focus on nutrition practices and problems in this country. Students will gain an understanding of factors affecting food selection and the role of nutrition in maintaining good health. Students will develop the ability to discriminate between reliable and unreliable information on the subject of food and nutrition. Breadth-Science.

BPKKIN 111-3 Food and Food Safety

This course includes basic information on food, the safety of the food supply and current issues around the production, storage and distribution of food. Students will gain an understanding of basic food components, the physical foundations of food science, and the elements of food processing and preservation. Food-borne disease, biotechnology, irradiation of food, contaminants and additives in food, Canadian food labelling and advertising regulations, and food consumption trends will be examined. Nutritional biochemistry concepts will be interfaced with practical questions of food choice and eating practices. Recommended: grade 11 chemistry.

BPKKIN 140-3 Contemporary Health Issues

Explores health from a holistic perspective, in which health is viewed as physical, psychological, and social well-being. Considers genetics, environment, personal health behaviors (such as diet, exercise, stress management, and drug use), socioeconomic status, health care delivery systems, and aging with the intent to improve students' abilities to evaluate health information. Breadth-Science.

BPKKIN 142-3 Introduction to Kinesiology

Basic procedures for the assessment of the status and performance of the individual according to the principles of anthropometry, functional anatomy, biomechanics, exercise physiology, and motor learning. Recommended: grade

11 biology, chemistry and physics. Breadth-Science.

BPKKIN 143-3 Exercise: Health and Performance

Introduces the student to exercise physiology. Focuses on personal exercise prescription to improve aerobic capacity, muscular strength and endurance, and flexibility. Also discusses athletic conditioning, e.g. speed and power training. The effects of nutritional and environmental factors on exercise and the role of exercise in weight control and stress management are considered. Recommended: medical clearance from a personal physician. Breadth-Science.

BPKKIN 180-3 Introduction to Ergonomics

Temporarily Withdrawn

> DELETED.

BPKKIN 180W-3 Introduction to Ergonomics

Intended for students with a potential interest in ergonomics or human factors. The course surveys the design of work, the workplace environment, information systems, and consumer products. Topics include musculoskeletal disorders, manual materials handling, workplace design, organization of work, design of human/machine interfaces, environmental ergonomics, industrial design, and legal and social issues. Prerequisite: Grade 12 Biology or Physics, Grade 12 Math. Writing.

BPKKIN 201-3 Biomechanics

This course will cover the application of basic mechanics to human movement. It will provide students with a basic understanding of how forces act on body segments and how movements are produced. The subject matter of this course is relevant to quantifying all forms of physical activity, from activities of daily living, physically challenged movement patterns, to elite athletic performance. It also has applications in medical settings, including rehabilitation and sports medicine. Prerequisite: MATH 150, 151 or 154, MATH 152 or 155 (may be taken concurrently), PHYS 101 (or 120 or 125 or 140), BPK (or KIN) KIN 142. Quantitative.

BPKKIN 205-3 Introduction to Human Physiology

An introductory survey of human physiology with an emphasis on mechanisms of regulation and integration. Anatomy of structures will be detailed only when it is critical to a functional understanding. Although this is intended as a survey course, some topics will be covered in reasonable detail in order to give insight into mechanisms of function. BPK (or KIN) KIN 208 may not be used as a

substitute for [BPK \(or KIN\) KIN 205](#) by students in the Kinesiology Major and Honors programs. Prerequisite: BISC 101, CHEM 281, PHYS 101 and 102. Kinesiology majors and honors students who have taken [BPK \(or KIN\) KIN 105](#) must also take [BPK \(or KIN\) KIN 205](#). For students taking both of these courses, credit will only be given for [BPK \(or KIN\) KIN 205](#).

[BPKKIN 207-3 Human Motor Systems](#)

Students are introduced to basic concepts in human motor systems underlying goal-direction movement. Topics including the problems of planning/control of movements, the role of the nervous system in integrating sensory and motor systems to produce movement, and motor learning are discussed. Taught from a behavioral and neurophysiological perspective and explores psychological influences on motor control. Research from a variety of distinct areas is integrated to provide a coherent picture of our understanding of human motor systems. Prerequisite: [BPK \(or KIN\) KIN 142](#) or permission of instructor.

[BPKKIN 208-3 Introduction to Physiological Systems](#)

An introduction to anatomy and physiological function of the major human systems, from a biomedical engineering perspective. Normally only available to students in the Biomedical Engineering Program. KIN 208 may be used as a substitute for KIN 105 by students in the Kinesiology Minor and Certificate programs. Kinesiology Major and Honors students may not receive credit for [BPKKIN-208](#). No student may take both [BPK \(or KIN\) KIN 105](#) and [BPK \(or KIN\) KIN 208](#) for credit, or both [BPK \(or KIN\) KIN 205](#) and [BPK \(or KIN\) KIN 208](#) for credit. Prerequisite: CHEM 180.

[BPKKIN 212-3 Food and Society](#)

Examines the relationship between society and the food we eat by evaluating how cultural, social, and economic forces interact to influence health and nutritional status. Attention is given to cultures in British Columbia. Impact of national policies and marketing on food choice are discussed. Prerequisite: [BPK \(or KIN\) KIN 110](#).

[BPKKIN 221-3 Special Topics in Kinesiology](#)

Selected topics in areas not currently offered within the undergraduate course offerings in the School of Kinesiology. Prerequisite to be announced.

[BPKKIN 241-3 Sports Injuries - Prevention and Rehabilitation](#)

Includes delineation of the role of the sports therapist and will study the structural

and functional characteristics of the body with regard to the prevention of injury in sport. A first aid approach to athletic injuries will be developed with practical experience in routine treatments. Prerequisite: [BPK \(or KIN\) KIN 142](#).

[BPKKIN 301-3 Biomechanics Laboratory](#)

A laboratory course on the quantitative biomechanical evaluation of human movement. Students will learn analysis techniques for quantifying kinematics and kinetics of body segments in athletes, normal populations, and special populations during activities such as walking and jumping. Experiments will look at the nature of muscular force generation, and the mechanical impedance properties of the musculoskeletal system, as well as patterns of muscle activation, using surface EMG. Prerequisite: PHYS 102 (or 121 or 126 or 141), [BPK \(or KIN\) KIN 201](#). Quantitative.

[BPKKIN 303-3 Kinanthropometry](#)

A study of human size, shape, proportion, composition, maturation and gross function related to basic concepts of growth, exercise, performance and nutrition. Prerequisite: [BPK \(or KIN\) KIN 105](#) or 142, and STAT 201 or an equivalent statistics course.

[BPKKIN 304-3 Inquiry and Measurement in Kinesiology](#)

This course covers the evaluation of measurement quality, test construction and assessment, and computer techniques for data capture and signal processing relevant to issues in Kinesiology. Prerequisite statistical knowledge will be put into practice when discussing typical research designs, modeling and hypothesis testing in kinesiology. Prerequisite: [BPK \(or KIN\) KIN 142](#), 201, 205, and STAT 201. Quantitative.

[BPKKIN 304W-3 Inquiry and Measurement in Kinesiology](#)

This course covers the evaluation of measurement quality, test construction and assessment, and computer techniques for data capture and signal processing relevant to issues in Kinesiology. Prerequisite statistical knowledge will be put into practice when discussing typical research designs, modeling and hypothesis testing in Kinesiology. Prerequisite: [BPK \(or KIN\) KIN 142](#), 201, 205, and STAT 201. Quantitative.

[BPKKIN 305-3 Human Physiology I](#)

Deals with the physiology and pathophysiology of the cardiovascular, respiratory, and renal systems in detail. Prerequisite: [BPK \(or KIN\) KIN 205](#), MBB 231 (or

201), MATH 155 (or 152). Non-majors require [BPK \(or KIN\) KIN 205](#) (or BISC 305), MBB 231 (or 201) plus permission of the instructor.

[BPKKIN 306-3 Human Physiology II \(Principles of Physiological Regulation\)](#)

Examines the regulation of body functions with an emphasis on the endocrine, gastrointestinal and neuronal systems. The course focuses on integration of physiological mechanisms at the cellular and organ levels. Examples of abnormal human physiology are used to illustrate important principles. Prerequisite: [BPK \(or KIN\) KIN 201, 205, MBB 231 \(or 201\), MATH 155 \(or 152\)](#). Non-majors require [BPK \(or KIN\) KIN 205](#) (or BISC 305), MBB 231 (or 201) plus permission of the instructor.

[BPKKIN 308-3 Experiments and Models in Systems Physiology](#)

Lab exercises will provide a hands-on experience in the acquisition of physiological data and mathematical and computer modeling of physiological systems. Lectures will provide an advanced understanding of select human physiological systems. Prerequisite: [BPK \(or KIN\) KIN 208](#) or all of [BPK \(or KIN\) KIN 205, 201, STAT 201](#) and a strong mathematical background.

[BPKKIN 310-3 Exercise/Work Physiology](#)

The study of human physiological responses and adaptations to acute and chronic exercise/work. Cardiorespiratory, cellular and metabolic adaptations will be studied and discussed in detail. Prerequisite: [BPK \(or KIN\) KIN 205, MBB 201 \(or 231\)](#). Recommended: [BPK \(or KIN\) KIN 201](#).

[BPKKIN 311-3 Applied Human Nutrition](#)

The principles of nutritional biochemistry are applied to nutrition in life cycle - pregnancy, lactation, infancy, childhood, adolescence and aging. The second part of the course deals with common disease conditions where nutrition plays an important role in prevention or treatment or both. The course is presented in the Canadian context featuring sources of help on Canadian practice, standards and regulations. Prerequisite: [BPK \(or KIN\) KIN 105 or 205 and 110](#). Students with credit for [BPK \(or KIN\) KIN 220](#) may not take [BPK \(or KIN\) KIN 311](#) for further credit.

[BPKKIN 312-3 Nutrition for Fitness and Sport](#)

This course examines the theory and application of nutrition for fitness and sport. Students will study issues around dietary practices commonly promoted for performance enhancement, including mechanisms, effectiveness, risks and

regulations. Students will learn skills for critical evaluation of nutrition research and nutrition claims, and will employ these in several small group projects investigating specific nutrition issues and products. Prerequisite: [BPK \(or KIN\) KIN 105](#) (or 205), and 110.

[BPKKIN 313-3 Nutrition and the Life Cycle](#)

The factors that determine human nutritional requirements and health under a range of conditions throughout the human life span (pregnancy, lactation, infancy, childhood adolescence, aging) are evaluated. The role of nutrition is evaluated in response to the metabolic and physiologic changes during growth and development versus aging, touching upon eating disorders, depression, osteoporosis, epigenetics, and pharmacology and toxicology of commonly prescribed medications in aging adults. Prerequisite: [BPK \(or KIN\) KIN 105](#) or 205 and 110. Students with credit for [BPK \(or KIN\) KIN 220](#) or 311 may not take [BPK \(or KIN\) KIN 313](#) for further credit.

[BPKKIN 314-3 Nutrition and Chronic Disease](#)

Principles of nutrition are applied to common disease conditions where nutrition plays an important role in prevention, treatment or both. Nutrition in obesity, diabetes, cancer and cardiovascular disease are highlighted. The impact of dietary interventions such as DASH and the Diabetes Prevention Program upon chronic disease is evaluated. Pharmacology and toxicology of common medications with regard to alterations in metabolism in disease are discussed, as well as noncompliant and depressed patients. Prerequisite: [BPK \(or KIN\) KIN 105](#) or 205 and 110. Students with credit for [BPK \(or KIN\) KIN 220](#) or 311 may not take [BPK \(or KIN\) KIN 314](#) for further credit.

[BPKKIN 324-3 Principles of Human Anatomy](#)

Pursues a systematic study of human anatomy with emphasis on functional applications. A study of organs and body systems using computer software supported tutorials to provide an understanding of the three dimensional organization of the human body. Participation in all tutorials is required. This course may not be taken for credit by kinesiology majors. Prerequisite: [BPK \(or KIN\) KIN-142](#), 205 and at least 60 units of undergraduate credit. Students with credit for [BPK \(or KIN\) KIN 325](#) or 326 may not take [BPK \(or KIN\) KIN 324](#) for further credit.

[BPKKIN 325-3 Basic Human Anatomy](#)

For students interested in physical education, health science professions and liberal arts. Brief discussions on applied anatomy, aging, common dysfunctions and diseases enable students to appreciate the relationship between structure

and function. Prerequisite: [BPK \(or KIN\) KIN 142](#) and either [BPK \(or KIN\) KIN 105](#) (with a grade of C or higher) or [BPK \(or KIN\) KIN 205](#). Available only through correspondence, this course will not be counted as an upper level optional course for a major in kinesiology. Students with credit for [BPK \(or KIN\) KIN 326](#) may not take [BPK \(or KIN\) KIN 325](#) for further credit.

[BPKKIN 326-4 Functional Anatomy](#)

Pursues a systematic study of human anatomy with emphasis on functional applications. A comparative study of organs and body systems using laboratory dissections to provide an understanding of the three dimensional organization of the human body. Participation in all labs is required. Prerequisite: [BPK \(or KIN\) KIN 142, 201, 205](#) and at least 60 units of undergraduate course credit. Students with credit for [BPK \(or KIN\) KIN 325](#) may not take [BPK \(or KIN\) KIN 326](#) for further credit.

[BPKKIN 336-3 Histology](#)

Light and electron microscopic study of mammalian tissues and organs with emphasis on human systems. Prerequisite: one of [BPK \(or KIN\) KIN 325, 326, BISC 305, 316](#).

[BPKKIN 340-3 Active Health: Behavior and Promotion](#)

Relationships among health, physical activity, and other health-associated behaviors are examined. In addition, the theories and models of health behavior, in the context of intervention and promotion strategies, are discussed. Pertinent background information is provided, concerning the influence of fitness on various disease states, as well as the epidemiology of health and exercise behaviors. Prerequisite: [BPK \(or KIN\) KIN 142, STAT 201 \(or PSYC 201\)](#). Recommended: KIN 140.

[BPKKIN 342-3 Active Health](#)

An extension of [BPK \(or KIN\) KIN 143, Exercise Management](#), this course parallels the on-campus course [BPK \(or KIN\) KIN 343](#). This course is designed for students completing the health and fitness certificate and/or a kinesiology minor. The goal of the course is to provide students with an opportunity to appreciate principles of exercise leadership, assess individual fitness needs, design programs and monitor effects of prescribed exercise. This course is available only through distance education. Prerequisite: [BPK \(or KIN\) KIN 105 \(or 205\), 142 and 143](#). Kinesiology majors and honors students may not receive credit for [BPK \(or KIN\) KIN 342](#).

BPKKIN 343-3 Active Health: Assessment and Programming

An extension of BPK (or KIN) KIN 143, Exercise Management, designed to provide students with an opportunity to appreciate principles of exercise leadership, assess individual fitness needs, design programs and monitor effects of prescribed exercise. The course includes a 34 hour practicum. Prerequisite: BPK (or KIN) KIN 142, 143 and 205; STAT 201 or an equivalent statistics course, KIN 340 (may be taken concurrently). Students must successfully complete a Criminal Record Check. Students with credit for BPK (or KIN) KIN 342 may not take BPK (or KIN) KIN 343 for further credit. Quantitative. Prerequisite: REQ-KIN 142, 143 and 205; STAT 201 or an equivalent statistics course, KIN 340 (may be taken concurrently). Students with credit for KIN 342 may not take KIN 343 for further credit. Students must successfully complete a Criminal Record Check. Equivalent Courses: KIN342 Quantitative

BPKKIN 344-3 Exercise Prescription

Scientific principles relevant to the design of safe and effective conditioning programs for both the general population and target groups. Students will learn effective training techniques for cardiovascular aerobic conditioning; muscular endurance, strength, and power; anaerobic conditioning, and flexibility. Safety, injury prevention, rehabilitation, reconditioning, and correct weightlifting mechanics will be discussed. Prerequisite: BPK (or KIN) KIN 110, 201, and 343.

BPKKIN 351-3 Practicum I

The first term of work experience in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: students must complete Bridging Online (visit www.sfu.ca/coop/bol for further details) at least two terms before their anticipated co-op placement. Students must then apply to the Kinesiology Co-op Program by the first week of the term preceding the work term. Normally, students will have completed a minimum of 45 units by the end of the term of application, BPK (or KIN) KIN 142, plus at least two other kinesiology courses and have a minimum GPA of 2.50. Work terms are graded as pass/fail (P/F).

BPKKIN 352-3 Practicum II

The second term of work experience in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: BPK (or KIN) KIN 351. Work terms are graded as pass/fail (P/F).

BPKKIN 375-3 Human Growth and Development

The fundamentals of physiological growth and development from conception to maturity. Topics included form a strong foundation for those interested in designing appropriate activity programs for children of all ages. Prerequisite: [BPK \(or KIN\) KIN 105](#) or 205, and 142.

[BPKKIN 380-3 Occupational Biomechanics](#)

This course will teach the principles of biomechanical analysis and their application in the workplace. Topics will include techniques for measurement and analysis of movement; analysis of forces and accelerations in three dimensions; work and power; simple biomechanical and biodynamic models; standards for lifting and carrying, their application and limitations. Prerequisite: [BPK \(or KIN\) KIN 180, 201, 205 and 326](#) which may be taken concurrently. Quantitative.

[BPKKIN 381-3 Psychology of Work](#)

The application of psychological principles and methods to the study of human performance at work. A systems approach will be taken to study the interactions among the individual worker, his/her task, groups of workers, and the management structure of the organization. Prerequisite: PSYC 210 or both of KIN 207 and STAT 201. Corequisite: STAT 201 may be taken concurrently. Recommended: KIN 180.

[BPKKIN 382-3 Workplace Health](#)

The focus of this course will be the study of the physical environment and its effects on the health, safety and performance of the worker. Physical problems associated with noise, vibration, lighting, radiation, dust and ventilation will be examined together with methods of recognition, treatment, protection and prevention. Prerequisite: [BPK \(or KIN\) KIN 142, 201, 205](#). Quantitative.

[BPKKIN 402-3 Mechanical Behavior of Biological Tissues](#)

Extension of KIN 201 provides students with an understanding of structure-function relations in musculoskeletal tissues (bone, cartilage and muscle) in health and disease. Includes effect of disease and aging on physiological and biomechanical properties, mechanics and prevention of tissue injury, and design of implants and prostheses. Prerequisite: [BPK \(or KIN\) KIN 201](#).

[BPKKIN 405-3 Clinical Exercise Physiology I: Cardiorespiratory and Metabolic Disorders](#)

A study of the clinical aspects of exercise physiology by thoroughly examining the relationship between exercise and chronic disease. For each chronic disease

state and condition, this course covers its physiology, pathophysiology, and pharmacotherapy along with exercise testing, prescription, safety, and programming issues. Prerequisite: [BPK \(or KIN\) KIN 305, 306, 324 or 326, 344.](#)

[BPKKIN 406-3 Clinical Exercise Physiology II: Musculoskeletal, Neuromuscular, and Immunological Disorders](#)

A study of the clinical aspects of exercise physiology by thoroughly examining the relationship between exercise and chronic disease. For each chronic disease state and condition, this course covers its physiology, pathophysiology, and pharmacotherapy along with exercise testing, prescription, safety, and programming issues. Prerequisite: [BPK \(or KIN\) KIN 305, 306, 324 or 326, 344.](#)

[BPKKIN 407-3 Human Physiology Laboratory](#)

Experiments dealing with the nervous, muscular, cardiovascular, respiratory, and renal systems are covered. Prerequisite: [BPK \(or KIN\) KIN 305 and 306](#), one of which must already have been completed and the other can be taken concurrently. Quantitative.

[BPKKIN 412-3 Molecular and Cellular Cardiology](#)

This course entails a detailed analysis of the molecular and cellular basis of cardiac function. The material will be derived from myriad disciplines including: anatomy (histology and ultrastructure), biomechanics, physiology, electrophysiology, biochemistry and molecular biology. A particular emphasis will be placed on the mechanisms by which the heart responds to stresses such as ischemia and exercise. Prerequisite: [BPK \(or KIN\) KIN 305.](#)

[BPKKIN 415-3 Neural Control of Movement](#)

An in depth study of the neurophysiology of movement. Illustrates general principles of neural control by exploring specific movement tasks including standing, walking, reaching/grasping, and eye movements. Prerequisite: [BPK \(or KIN\) KIN 306 or BISC 305 and \[BPK \\(or KIN\\) KIN 326.\]\(#\)](#)

[BPKKIN 417-3 Obesity, Adipocyte Function and Weight management](#)

Discusses mechanisms of health and disease with respect to a range of molecular mechanisms of physiology and organ system function, including how adipokines have an effect on metabolic alterations in immunology and hormone production in diabetes, stress and cardiovascular disease. Health behavior change in obesity and impact of dietary habits upon hyperlipidemia and apolipoprotein metabolism are addressed in addition to nutritional challenges in

weight management and obesity. Prerequisite: [BPK \(or KIN\) KIN](#) 110, 306, 314 (or 311), 340.

[BPKKIN](#) 417W-3 Obesity, Adipocyte Function and Weight management

Discusses mechanisms of health and disease with respect to a range of molecular mechanisms of physiology and organ system function, including how adipokines have an effect on metabolic alterations in immunology and hormone production in diabetes, stress and cardiovascular disease. Health behavior change in obesity and impact of dietary habits upon hyperlipidemia and apolipoprotein metabolism are addressed in addition to nutritional challenges in weight management and obesity. Prerequisite: [BPK \(or KIN\) KIN](#) 110, 306, 314 (or 311), 340. Writing

[BPKKIN](#) 420-3 Selected Topics in Kinesiology I

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations.

[BPKKIN](#) 421-3 Selected Topics in Kinesiology II

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: to be announced.

[BPKKIN](#) 422-3 Selected Topics in Kinesiology III

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: To be announced

[BPKKIN](#) 423-3 Selected Topics in Kinesiology IV

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations.

BPKKIN 426-3 Neuromuscular Anatomy

This course explores human neuromuscular anatomy using a lecture format supplemented by course readings, an anatomy atlas and tutorials which are presented in an interactive fashion via the Macintosh Computer Laboratory on campus. A strong grounding will be given in neuroanatomy with additional emphasis on the limb musculature and its innervation. Prerequisite: BPK (or KIN) KIN 324 or BPK (or KIN) KIN 325 or BPK (or KIN) KIN 326. Students with credit for BPK (or KIN) KIN 422 may not complete this course for further credit.

BPKKIN 430-3 Human Energy Metabolism

Pathways of energy flow in animals and man, and the relationship of biological energy transduction to the needs of the whole animal. Quantitative aspects of bioenergetics and adaptation to changes in energy supply and demand. Measuring techniques applied to adaptations to muscle activity and variations in food intake. Prerequisite: BPK (or KIN) KIN 306 or 310 or MBB 321 (or BICH 321).

BPKKIN 431-3 Integrative Cancer Biology

Core concepts in cancer biology ranging from the clinical and pathological basis of carcinogenesis to the molecular and cellular changes involved in cancer development. Emphasis will be on the complex interactions of lifestyle factors, genetics and social cultural determinants on cancer risk. Prerequisite: MBB 231 (or MBB 201) and at least 90 units. Students with credit for BPK (or KIN) KIN 420 may not complete this course for further credit

BPKKIN 444-3 Cardiac Disease: Pathophysiology and Assessment

Examines the etiology, prevention, and rehabilitation of cardiovascular disease. Involves the assessment of patient risk factors, and non-invasive cardiovascular assessments. Particular emphasis will be placed upon the recording and interpretation of the electrocardiogram in health and disease. Prerequisite: BPK (or KIN) KIN 305. Recommended: BPK (or KIN) KIN 110, 306, 310 and 343.

BPKKIN 445-3 Advanced Cardiac Rehabilitation

Builds upon the knowledge and skills learned in KIN 444 through advanced ECG interpretation, exercise stress testing, and patient counseling. Students will be required to complete a 30 hour practicum within a community or hospital-based cardiac rehabilitation program. In addition, this course will introduce students to relevant research questions in cardiac rehabilitation and how this field is expanding and evolving. Prerequisite: BPK (or KIN) KIN 444. Students must successfully complete a Criminal Record Check. Students with credit for BPK (or

KIN) KIN 424 may not take this course for further credit.

BPKKIN 446-3 Neurological Disorders

Examines neural and neuromuscular diseases, including Alzheimer's disease, amyotrophic lateral sclerosis, multiple sclerosis, stroke, and myasthenia gravis. Emphasizes currently favoured hypotheses, underlying evidence and pathogenic mechanisms. Prerequisite: BPK (or KIN) KIN 306. Recommended: BPK (or KIN) KIN 336 and/or BPK (or KIN) KIN 415.

BPKKIN 448-3 Rehabilitation of Movement Control

This course is aimed at students interested in neuromuscular rehabilitation. Students will learn about the pathological origins of movement disorders associated with impaired function of sensory and motor systems. The course will be focused on the stages and strategies for recovery of voluntary control of essential functions. The range of rehabilitation interventions available to assist recovery and restore voluntary control will be explored, with special emphasis on advanced techniques to restore control of movement and bodily functions in paralyzed people. Prerequisite: BPK (or KIN) KIN 201, 207 and 306, or for biomedical engineering students, BPK (or KIN) KIN 201, 208 and 308.

BPKKIN 451-3 Practicum III

The third term of work experience for students in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: BPK (or KIN) KIN 352. Work terms are graded as pass/fail (P/F).

BPKKIN 452-3 Practicum IV

The fourth term of work experience for students in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: BPK (or KIN) KIN 451. Work terms are graded as pass/fail (P/F).

BPKKIN 453-3 Practicum V

Optional term of work experience for students in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: BPK (or KIN) KIN 452. Work terms are graded as pass/fail (P/F).

BPKKIN 457-3 Behavioral Neuroscience Undergraduate Honors Thesis Proposal

Directed study and research leading to an Honors thesis proposal (BPK (or KIN) KIN459/PSYC 459). Prerequisite: 90 units, including PSYC 301 with a minimum grade of B and permission of the Chair of the Behavioral Neuroscience Coordinating Committee. This course is identical to PSYC 457 and students may not take both courses for credit.

BPKKIN 459-9 Behavioral Neuroscience Undergraduate Honors Thesis

A written thesis based on research previously proposed in BPK (or KIN) KIN 457/PSYC 457. Prerequisite: a minimum grade of B in BPK (or KIN) KIN 457/PSYC 457. This course is identical to PSYC 459 and students may not take both courses for credit. Corequisite: must be enrolled in the Honors Program of the B.Sc. in Behavioral Neuroscience.

BPKKIN 461-3 Physiological Aspects of Aging

Designed for those who require a serious but fairly broad discussion of specific physiological aspects of aging. The overall emphasis is on humans and other mammalian species and the varieties of aging changes they manifest. Prerequisite: BPK (or KIN) KIN 105 or 205, 142 and 90 units.

BPKKIN 481-3 Musculoskeletal Disorders

Considers the prevalence, distribution, risk factors, mechanisms, management and prevention of disorders of muscle, connective tissue, joint, and bone. Covers tendonitis, bursitis, carpal tunnel syndrome and other overuse injuries from work and sport; whiplash-associated disorders; arthritis; osteoporosis; chronic pain; fibromyalgia. Prerequisite: BPK (or KIN) KIN 201 and 326.

BPKKIN 484-3 Altitude and Aerospace Physiology

The theme of this course is human physiology in environments of decreased atmospheric pressure, high G-force, and weightlessness. The course will deal with acute and chronic adaptations to these environments as well as life support systems and 'countermeasures' developed to expand the envelope of human performance. Developments of breathing apparatus and G-suits for high performance aircraft will be examined as they relate to solving the physiological problems of exposure to these environments. Effects of short and extended periods of weightlessness on cardiovascular, cerebrovascular, musculo-skeletal, neural, hormonal and vestibular systems will be explored. Prerequisite: BPK (or KIN) KIN 305, 306. Recommended: BPK (or KIN) KIN 407. Quantitative.

BPKKIN 488-3 Ergonomics Laboratory

A project based laboratory course that applies theoretical knowledge to industrial situations. Instruction will be provided in proposal development, evaluation techniques, and report writing. Students will complete projects in human-machine interaction, occupational ergonomics, and industrial design. Prerequisite: KIN 180W and KIN 380 plus any two of the following: BPK (or KIN) KIN 381, 382, 481, IAT 333, IAT 334, IAT 432, or BPK (or KIN) KIN 496*, 498*, 497* (*if ergonomics related).

BPKKIN 496-3 Directed Study I

Directed reading and literature research on topics selected in consultation with the supervising instructor. This course may not be repeated for additional credit. A short proposal of the project, approved by the course supervisor, must be submitted for approval to the chair of the undergraduate program committee by the end of the first week of classes of the term. Prerequisite: Permission from the chair of the undergraduate program committee. Usually upper level standing with at least 75 units in the Biomedical Physiology and Kinesiology program will be required.

BPKKIN 497-3 Undergraduate Honors Thesis Proposal

Supervised directed study and research leading to the development of a formal undergraduate thesis proposal for work to be conducted in KIN-BPK 499. The activity in KIN-BPK 497 may be augmented by other course work and a pilot study. In cases where an industrial/community partner is involved in the development of a project, the work need not be conducted at Simon Fraser University and may be completed external to SFU. Supervision of KIN-BPK 497 will be conducted by a suitable faculty member, but may be co-supervised by an industrial/community partner. Supervisor(s) must be approved by the undergraduate program committee. The plan of activities for each KIN-BPK 497 should be submitted to the chair of the undergraduate program committee for approval one month prior to the term in which the course will be taken. Prerequisite: only students in the honors program may enrol for KIN-BPK 497; 90 units, STAT 201, and permission of the chair of the undergraduate program committee.

BPKKIN 498-3 Directed Study II

Directed study and research selected in consultation with the supervising instructor. A short proposal of the project approved by the course supervisor, must be submitted for approval to the chair of the undergraduate program committee by the end of the first week of classes of the term. Prerequisite: STAT 201 and permission from the chair of the undergraduate program committee.

Usually upper level standing with at least 75 units in the Biomedical Physiology and Kinesiology program will be required.

BPKKIN 499-12 Undergraduate Honors Thesis

A thesis based on research previously proposed in BPK (or KIN) KIN 497. Formal approval of the research topic is given by attaining a minimum grade of B in BPK (or KIN) KIN 497. Regulations regarding the locale of the work, supervision and other arrangements, follow those for BPK (or KIN) KIN 497. The written thesis should be submitted to the chair of the undergraduate program committee by the last day of exams of the term. The thesis will also be presented orally as a seminar in an open forum at the end of the term. Prerequisite: BPK (or KIN) KIN 497. Only students in the honors program may enrol for KIN-BPK 499. A student may enrol for one other course concurrently with KIN-BPK 499 with permission from the faculty supervisor for KIN-BPK 499.